REPORT

OF THE

STATE DEPARTMENT

OF

FORESTRY

Maryland.
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1927/28

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FOR

FISCAL YEAR 1928

OCTOBER 1, 1927, TO SEPTEMBER 30, 1928

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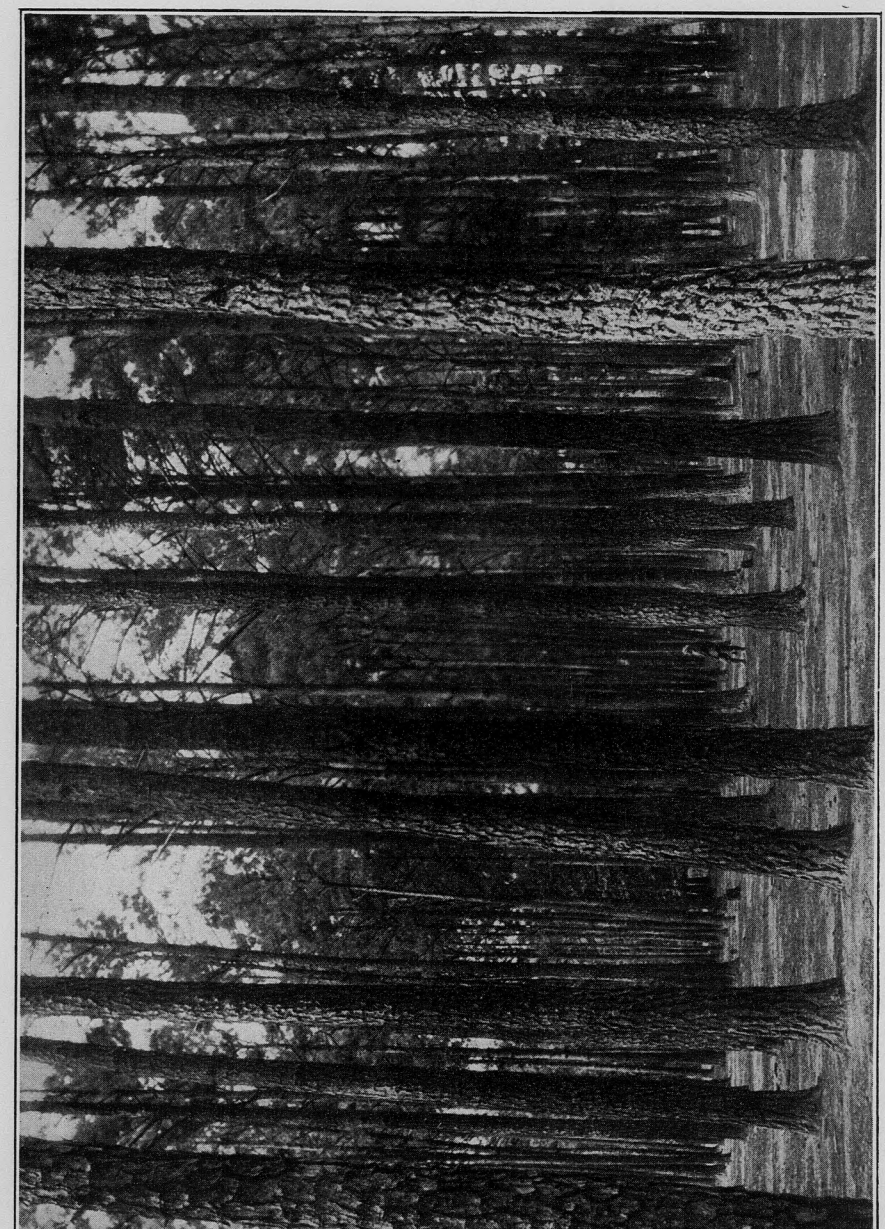


PURE STAND OF SECOND GROWTH LOBLOLLY PINE

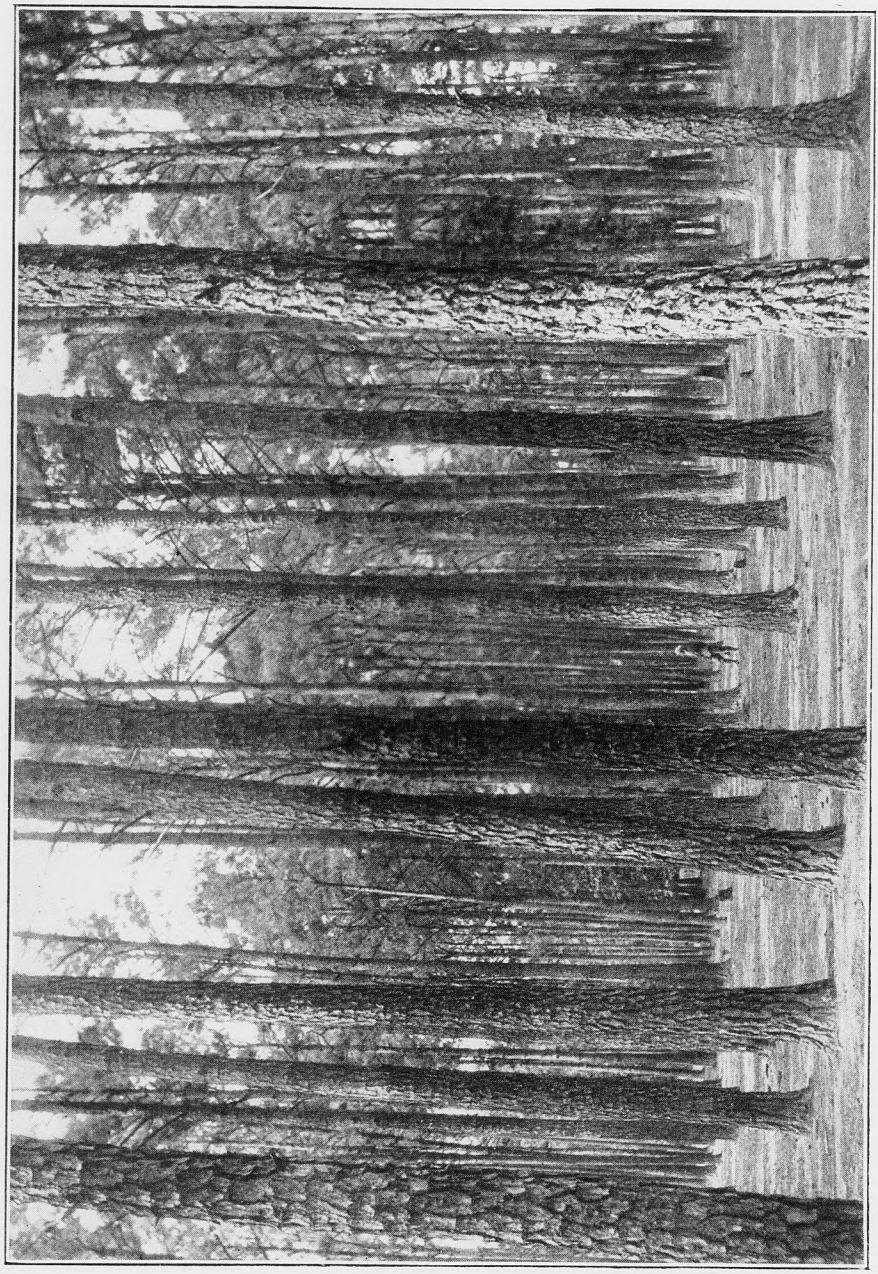
An unusual stand of 65-year-old trees on the Eastern Shore.

INTRODUCTION

THE YEAR HAS MARKED A DISTINCT ADVANCE IN FORESTRY WORK along all lines, but more particularly in forest protection and reforestation. It has been possible, through the increase in appropriations for protection and a large allotment from the Federal Government, to extend the field organization, to give better supervision, to keep in closer contact with the work of the forest wardens, and to build up a better *esprit de corps* in the service generally. Efficiency has been greatly increased by the employment, during the fire season, of additional fire patrolmen or smoke chasers; by equipping the wardens with additional fire fighting tools; by securing better co-operation from private owners in fire prevention; and by more effective co-operation with the railroads under the Safety Strip law, with the result that the size of the average fire has been greatly reduced in acreage, with a corresponding reduction of damage. Since this was accomplished, during what may be considered two normal fire seasons, the results are most gratifying.

Interest in forest planting is developing rapidly, as indicated by the numerous requests for forest planting stock and the number of plantations made during the year. These exceeded over one hundred. The State Forest Nursery, which distributes this stock at cost to landowners of the State, has been unable to meet the demand, but in the next year it is expected that the nursery will reach an output of one million trees, and it will be built up in the next two years to approximately two million trees annually, which should be sufficient to take care of normal years even with the stimulated interest that is now shown in reforestation.

An unusual stand of 65-year-old trees on the Eastern Shore.



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The next important advance in forestry should be along the lines of extending the State Forests to include large areas of forest land, particularly in Western Maryland, that are now non-productive, but which acquired as State Forests at a low cost per acre would be built up into a source of revenue to the State, in timber production, watershed protection, and recreation areas. Plans have been formulated for presenting this matter for legislative action in 1929.

ASSISTANCE TO WOODLAND OWNERS

The Department is constantly endeavoring to assist the private owners of woodlands in every way possible, and has kept up the plan started many years ago. This consists of making an examination of the woodland when requested by the owner, and discussing with him on the grounds a plan of management. This plan is then written up in the form of a report, with recommendations, and submitted to the owner.

One hundred examinations of this kind were made during the past fiscal year in seventeen counties, and covered 8,761 acres of land, or an average woodland of 88 acres.

If the preliminary examination shows that there is sufficient timber ready for cutting to make a timber operation practicable, then further assistance is offered in selecting the trees for cutting, estimating the amount and value of the timber to be cut and plan of operation. Twelve of these selective markings and estimates were made in eight counties, with an average of 56 acres per marking. In addition, three estimates in three counties of 204 acres, or 68 acres per estimate, were made. A detailed table of the examinations, selective markings, and estimates will be found in the appendix.

The Department assisted the Board of Welfare in examining and reporting upon the woodlands of the House of Correction at Jessup. It also assisted the Colored Normal School at Bowie in an appraisal of damages in a trespass case.

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STATE FORESTS

Skipnish	916				
Brier Ridge	991				
Herrington Manor	713				
Kindness	206				
State Forests	2,826	Acres	Garrett	County	
Auxiliary State Forests	600	"	"	"	
	3,426	"	"	"	
Fort Frederick State Forest	189	Acres	Washington	County	
Patapsco State Forest	1,116	Acres	Howard-Baltimore	Counties	
Auxiliary State Forests	1,200	"	"	"	"
	2,316	"	"	"	"
Seth Demonstration Forest	65	Acres	Talbot	County	

State Forests	4,196	Acres
Auxiliary State Forests	1,800	"
Total under State Control	5,996	"

Garrett County

Three of the areas in this county are contiguous and are situated in the west central portion of the county between the Youghiogheny River and the West Virginia boundary. The fourth area, the Kindness tract, is separate, but only a few miles to the south of the other areas.

These four forests were given to the State, three of them embracing 1,917 acres, by Messrs. John and Robert Garrett, and one of 656 acres by Messrs. Henry and Julian LeRoy White, making a total of 2,573 acres. In addition, 253 acres have been purchased in three small lots for the purpose of consolidating the holdings. The most recent purchase was 28 acres from the Groves estate, which was added to the Skipnish State Forest.

While the Garrett County area is primarily a timber growing forest there are possibilities for recreation. Situated in the Allegheny Mountains at an average elevation of 2,300 feet above sea level, these State lands, together with the auxiliary State Forest at Swallow Falls, administered under an agreement with the Grand Lodges of Masons of West Virginia and Pennsylvania, offer attractions to campers and other forms of out-door recreation. The clear, cool mountain

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air and the young forest growth, unmarred by fire, are the main advantages. The lack of good roads has held up the use of these areas as camping grounds during the past year.

The telephone line maintained by the Department for the protection of the State lands has been rebuilt by the State and the Youghiogheny Power Company jointly. The old State right-of-way was used and the Power Company erected the poles and strung the wires. The Department furnished the poles, all of them—325—being cut from the State Forests. The line is of the best standard construction, insuring a good service throughout the area.

A local Resident Forest Warden administers the area, protecting it from fire and assisting campers to locate.

Fort Frederick

This old historic shrine of Maryland's Colonial days, situated on the banks of the Potomac River at Big Pool, Washington County, is being visited more and more as it becomes better known. While no money has been available to restore or preserve the walls of the Fort, built in 1756, the poison ivy is being eradicated from the walls, the interior and exterior are kept clean, and the grass cut.

The experimental plantings are being carried on and now consist of two acres of locust, two acres of locust and Scotch pine, one and a quarter acres of Scotch pine, one acre of sugar maple, one acre of red pine, one acre of white ash, two acres of tulip poplar, and one acre of red oak. Most of these areas were planted through the generosity of the Daughters of the American Revolution and the Children of the American Revolution.

Patapsco

The Patapsco State Forest, lying as it does approximately 11 miles from the City Hall of Baltimore and only four miles from the city line along the bank of the Patapsco River, between Relay and Hollofield, has, as in the past, been a Mecca for the people of Baltimore. Over 1,000 people used the Patapsco Forest for camping during the past year, and it is estimated that 7,000 more people used it for one day excur-

sions. Under the system that has been in vogue for the past 12 years, permits, given without cost, are required for all who use the State Forest for over-night camping. For daily picnics, however, no permits are required.

Only a limited amount of improvement work has been done, due to lack of funds. The suspension bridge at Orange Grove was repainted during the spring; the river road on the Howard County side between Avalon and Orange Grove was patched up, and some drain pipe, supplied by the County Commissioners, was laid. Work was also done on the Baltimore County side, between Avalon and Vineyard.

Several more springs were walled up and trails brushed out, all of the old trails were brushed out again, and in some cases, twice.

The location of the final stretch of the Gas and Electric's new high power line, between Thistle and Hilton Avenues, was decided upon and a lease for the right-of-way entered into. The Department feels that the present location is the best that can be found—one that does the least amount of damage to trees and the beauty of the State Forest. One small area of co-operative land was withdrawn on application by the owner. Two fires occurred on the Patapsco area this year. One was caused by sparks from a sawmill, the other by a tourist.

Seth Demonstration Forest

Mrs. Mary W. Seth, of Easton, Talbot County, in April, 1928, deeded a tract of 65 acres to the Department as a memorial to her husband, General Joseph B. Seth, who died in November, 1927. The stipulation was that it should be known as the Seth Demonstration Forest and should be used to demonstrate proper forestry practices.

The tract lies about three miles southeast of Easton on the Ivytown Road, and was logged over in 1913, the timber being all cut. This old stand was in part hardwoods, and as no provision was made for the establishment of loblolly pine, a large part of the area came up to oak, gum, and other hardwood sprouts. The northwestern portion is coming back in pine, probably due to a fire just before or after logging. A strip along the road on the east was cleared of hardwoods in 1925.

A plan of silvicultural treatment had been made for the former owner in the spring of 1927, and with a few modifications will be carried out. A boundary survey was made in 1928.

REFORESTATION

State Forest Nursery—The State Forest Nursery, on the grounds of the University of Maryland at College Park, has had a very successful year. The demand for forest planting and roadside planting stock, as in former years, has far exceeded the supply. During the year, steps were taken to enlarge greatly the output of forest planting stock—especially that of loblolly pine, in an attempt to meet requests for extensive planting of this species on the Eastern Shore and in Southern Maryland. Plans now under way provide for an output of 750,000 trees of this species in the next year, with a probability of reaching the million mark in two years.

In addition to loblolly pine, five other species of conifers—red pine, Scotch pine, white pine, Norway spruce, and arbor vitae, and two hardwoods—sugar maple and tulip poplar, suitable for forest planting, were produced in quantity in 1928, and several other species in an experimental way.

Seed Collection—As far as possible the seed used at the Forest Nursery for the propagation of trees is collected in the State, not only because the seed can be collected at lower cost than by purchasing outside, but because the seed from native grown trees is preferable to that secured elsewhere. In 1927 the only native trees from which seed could be obtained were loblolly pine, shortleaf pine, sugar maple, and tulip poplar.

There was a good crop of loblolly pine cones in the fall of 1927, and as this species usually does not produce seed in sufficient quantity to make seed collection practicable oftener than every three to five years, arrangement was made for securing a large supply of seed. Scouting during the late summer indicated places where cones in quantity could be obtained, and local wardens and other people did the collecting. Most of the cones were collected from felled trees, and the average price paid for collecting them was 75 cents per bushel.

It is interesting to note in this connection that the boys in

two 4-H Clubs in Dorchester County collected 144½ bushels of cones by climbing the trees and picking the cones. In all, 609 bushels of cones were collected and shipped to the State Forest Nursery at College Park. A building at the Nursery was arranged for drying the cones and extracting the seed during the winter months. From the cones, which included also 20 bushels of shortleaf pine, 700 pounds of seed were extracted, which is a sufficient supply for four or five years. The seed is kept in sealed cans, in a cool place, to prevent deterioration. In addition to shortleaf pine seed, a limited amount of cypress, and several acorns of the different varieties of oak, together with maple, tulip poplar, ash, black locust, and other species, were collected for use at the nursery.

Seeding—During the year, approximately 23,800 square feet of seed beds were prepared and seeded, distributed as follows among the different species:

Loblolly pine	13,568 sq. ft.	White spruce	768 sq. ft.
White pine	1,156 " "	Shortleaf pine	1,212 " "
Red pine	2,592 " "	Douglas fir	844 " "
Scotch pine	1,216 " "	Larch	512 " "
Arbor vitae	456 " "	Tulip	336 " "
Norway spruce	740 " "	Sugar maple	400 " "

It has been found that loblolly pine seedlings of sufficient size for forest planting can be produced in one year by early seeding and by reducing the number of trees per square feet, so as to insure good root development and sturdy stems. In practice, this averages about 40 seedlings per square foot. The only other conifers in which seedlings of sufficient size for planting can be grown in one year are the bald cypress and larch.

Transplants—In the spring of 1928, there were transplanted from the seed beds to nursery rows, spaced eight inches apart, with trees two inches apart in the rows, the following stock:

Loblolly pine	50,000	Scotch pine	9,000
Red pine	100,000	White pine	10,000
Japanese red pine	4,000	Western yellow pine	900
Norway spruce	25,000	Southern white cedar	175
Arbor vitae	5,000	White spruce	7,000

An inventory at the end of the season showed that 702,000 trees were available for forest planting for the next year.

SHADE TREE WORK

The Roadside Tree Law, enacted in 1914, placed the protection of trees growing within the rights-of-way of public roads under the Forestry Department. The Department has been zealous for the protection and care of all public trees, and it is felt that the public at large is realizing that trees are an asset to a road or street, and that the Department is looking after the interests of the people of Maryland and championing their cause. The Law is regulatory and not mandatory in its application; that is, the Department seeks to regulate the trimming and removal of trees on necessary work only, and is not trying to dictate or instigate tree work.

The fourteen years operation of this Law has brought satisfactory results and demonstrated beyond any question that the public interest in roadside trees may be fully protected. The pole line companies have found that the trimming they require can be done more satisfactorily, and the abutting property owners and the public as a whole feel, also, that the work is done more satisfactorily under the present system of supervision, which removes in a large measure the friction between the abutting property owners and the pole line companies in trimming roadside trees.

No trimming or cutting can be done without a permit, which is only issued by the District Foresters and the Baltimore office. In most cases wardens are assigned to supervise the work. During the past year there were 39 Forest Wardens assigned to tree work. The cost of the work is borne entirely by those who apply for a permit, so that the supervision and regulation are accomplished without cost to the State.

In connection with the regular Forest Wardens' conferences last spring, conferences for Wardens assigned to tree work were held in Salisbury, Easton, Elkton, Oakland, Cumberland, and Frederick, and a special one was held in Baltimore for the central part of the State. These conferences were well attended, and many points were cleared up and straightened out.

The offer of the State Department of Forestry to examine and report upon conditions of shade trees in the cities and towns, giving recommendations for improvements and submitting a planting plan, was renewed. Such a plan was requested

Fig. 1.—SETH DEMONSTRATION FOREST NEAR EASTON, TALBOT COUNTY
Sixty-five acres given as a memorial to the late General Joseph B. Seth.

Fig. 2.—PLANTED LOBLOLLY PINE NEAR BOWIE, PRINCE GEORGES COUNTY
Thirteen-year-old stand averaging six inches D. B. H. and forty feet high.

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and made for the town of Kensington. A plan for the care of the shade trees around the House of Correction at Jessup was also made. The trees on the property of the Springfield State Hospital at Sykesville were also examined and the recommendations of the Department followed out.

The planting of trees along the public highways is now becoming recognized as an improvement second only in importance to the building and maintaining of the highways themselves. The State Department was mindful of this and again offered free trees to individuals or organizations who would comply with certain requirements. These requirements were as follows:

1. Only white ash, green ash, black walnut, tulip poplar, honey locust, sweet gum, and cypress are available for distribution.

2. Trees will not be furnished for less than one-quarter mile of planting on both sides of the road nor for more than one mile of such planting.

3. All trees must be planted within the public right-of-way and far enough from the edge of the paved highway to meet road requirements.

4. The consent of abutting property owners must be secured where planting is considered.

5. The spacing of trees on each side of the road to be not less than forty feet apart for cypress, and not less than 60 feet apart for walnut, tulip poplar, honey locust, sweet gum, white ash, and green ash—a wide spacing is preferable.

6. Trees are furnished free at the College Park Nursery. The applicant must pay the transportation charges from the nursery to the place of planting, furnish the labor for planting the trees, provide suitable guard stakes, and give assurance that the trees will be properly cared for after planting.

7. The Forestry Department will, upon acceptance of the above conditions, examine the location where planting is proposed, to determine whether planting is practicable and if so what species of trees is best adapted for the location and the preparation of a planting plan with estimate of cost. It will also furnish a man to supervise the planting.

Applications will be filed in the order received and trees furnished to the first applicants who can comply with the conditions where it is found planting is most practicable.

A large number of requests for this free tree offer were received, and after investigation as to site and general suitability, 11 applications were granted and 1,128 trees planted for a total distance of seven miles.

The Department felt that a more detailed knowledge of the road conditions of the State in regard to trees should be had, so during the summer studies were made of typical State highways for the purpose of obtaining in a detailed way the roadside conditions with respect to suitability for present or future planting.

A list of the roads thus studied or surveyed and the miles found suitable for planting follows:

	Total Miles	Miles Suitable for Planting
National Pike; U. S. Route 40		
Baltimore City line to Frederick City line	51.1	17.5
Frederick City line to Hagerstown City line	24.0	15.2
Hagerstown City line to Hancock	26.5	15.7
Hancock to Cumberland City line	38.5	6.8
Cumberland City line to Frostburg	15.5	3.1
Frostburg to Penn State line	23.8	11.9
	179.4	70.2
Harford Road		
Baltimore City line to Benson (Bel Air Road)	14.1	3.1
Bel Air Road; U. S. Route 1		
Baltimore City line to Benson (Harford Road)	14.1	4.2
Columbia-Seventh St. Pike; State Route 28		
Ashton to Silver Spring (D. C. line)	16.3	9.2
Colesville Pike; State Route 27		
Ashton to Sligo	13.0	8.8
Baltimore, Reisterstown, Hanover Pike; U. S. Route 140 and State Route 30		
Baltimore City line to Reisterstown	10.7	.3
Reisterstown to Penn State line	18.9	13.6
	29.6	13.9
York Road; U. S. Route 111		
Baltimore City line to Penn State line	26.5	7.8

There have been several arrests and convictions for violations of the Roadside Tree Law during the past year.

FOREST INVESTIGATIONS

Early in the year, the Baltimore Association of Commerce organized a State Survey Committee for the purpose of gathering data as to the State's natural resources and how these resources might be best developed. The survey included the forest resources, and the State Forester was made a member of the survey committee. The Forestry Department, through many years of investigation of forest conditions and forest uses in the State, has assembled rather complete data regarding the forest, and was, therefore, able to bring this information together promptly and in concise tabular form for the use of the survey committee.

This report was put out in mimeographed form by the Association of Commerce, and the material it contains, with certain other additions, has been published by the Forestry Department in bulletin form under the caption, "Facts about Maryland Forests."

Sawmill Study—This study was undertaken for the purpose of ascertaining the best methods of cutting and handling sawtimber and related products. Typical operations in the hardwood sections were studied, in Harford, Baltimore, Frederick, and Garrett Counties. The study was not completed at the end of the year, but most of the field data has been secured. A report will follow.

As in previous years, statistics on timber production throughout the State have been secured with a view to keeping lists of timber operators up to date and furnishing statistics as to the kinds and amount of timber that is being cut annually.

Nursery Study—Twenty different species of trees are being grown from seed at the State Nursery in order to furnish suitable planting stock at low cost for reforestation work. Accurate records are being kept and experiments are conducted with a view to determining the best nursery practice for growing the various kinds of trees. Among the important studies being made are: Treatment of seed preliminary to seeding; treatment of the soil to prevent "damping off" and for weed control; and density of sowing to produce the best seedling stock at lowest cost.

A special study of "damping off" and weed control was conducted during the summer in co-operation with the Forest Pathology Division of the U. S. Bureau of Plant Industry. Thirty-one seed bed plots, 4 by 4 feet, were carefully laid out, representing 11 different species, and the soil in different plots was treated with different material, including formaldehyde, aluminum sulphate, and sulphuric acid, each treated plot having its corresponding untreated check-plot. Notes were made on germination—the plots were weeded twice each week for two months and records kept of the number of weeds and grass at each weeding, and also of those that had "damped off" or shown any mechanical injury. The results are not sufficiently conclusive, and the experiments will be conducted another year. The indications are that formaldehyde is the best agent for controlling "damping off," while sulphuric acid is most effective in weed control.

Forest Plantations—The plantation made in 1915 by the Forestry Department at Bowie on the lands of the Maryland Normal and Industrial School was reexamined for the second time in 1927, the trees measured and growth recorded. The results show a very rapid growth and indicate that the range for commercial planting and loblolly pine can be very much extended in the State, and that this species on poor, sandy soil, in which the permanent water-table is not lower than ten feet, is probably the most valuable tree for commercial planting within its range.

EDUCATION

The educational work conducted by the Department is one of its principal activities and consumes a considerable portion of the time of the office staff and district foresters. Since the State owns so little of forest land, and the practice of forestry must be advanced largely through educational methods, every opportunity is used to reach landowners and the public generally interested in forest education. The chief agencies employed are public lectures and addresses before all kinds of organizations, such as service clubs, schools, garden clubs, parent-teacher associations, and various other civic organizations.

During the year 131 of these lectures were given, 62 of which were illustrated. A list of the lectures is included in the appendix of this report. The Department has a large collection of several thousand photographs, and more than a thousand lantern slides, most of them beautifully colored, with full equipment of stereopticon and moving picture machines, offering a free lecture service to any responsible organization.

Publications—The Department issues, from time to time, reports, bulletins, and leaflets on various subjects of timely interest. During the year there were published and distributed the annual report for 1927 and a 40-page, illustrated bulletin entitled "Windbreaks and Shelterbelts for Maryland," by F. B. Trenk, Assistant Forester. This shows the need and value of windbreak plantings to protect homes, farm buildings, and garden crops; the proper species of trees to use; and the best method of planting.

In addition six illustrated leaflets, of four pages each, were published on the following subjects: State Forests for Maryland, State Forests and Industry, State Forests and Water Conservation, State Forests and Recreation, State Forests Provide Public Hunting and Fishing, and Idle Land and Busy Trees.

The Department issues a monthly NEWSLETTER to the wardens, newspapers, and others who apply for it. This contains items of news regarding the Department's activities.

The newspapers this year, as heretofore, have made generous use of material furnished by the Department, and have helped greatly in stimulating a general interest in forestry.

Exhibits—The Department furnishes exhibits on various forestry subjects, which are set up at county fairs and loaned to schools and other responsible organizations. One of these exhibits, showing the old method and the improved method of making maple sugar and syrup from sugar maple trees and constituting an important industry in Garrett County, Maryland, was shown at the Garrett and Washington County fairs and attracted a great deal of interest. In addition, special exhibits were shown at 12 other places.

Demonstrations—One of the most effective means of inducing woodland owners to practice forestry has been by conducting demonstrations in timber marking, measuring, thinning, and improvement cutting in various parts of the State. Much of this work has been done in co-operation with the Extension Service, and has brought the practice of correct methods of handling woodlands to forest owners in hundreds of communities in various parts of the State.

FOREST FIRE CONTROL

The necessity of forest fire control activities was early recognized by the State Department of Forestry. The organic act providing for the establishment of the Forestry Department provided for the appointment of Forest Wardens—non-salaried officials, to enforce laws and to suppress forest fires. Early in 1906 and in 1907, the first Forest Wardens were appointed, principally in Western Maryland where the fire hazard was highest. This handful of men had little or no equipment, and at that time, public sentiment in favor of forest protection was undeveloped. Despite these handicaps, the Wardens, faithful to their pledge, accomplished much in suppressing fires, in enforcing laws, and particularly in spreading their belief in forest fire prevention.

Gradually, changes and improvements were made in the organization and the equipment. The Weeks Law, passed by the National Government in 1911, provided for appropriations to the State for co-operative forest protection on the watersheds of navigable streams. Patrolmen were hired, under this provision, to cover mountain watersheds. In 1912 the first forest fire lookout tower was built on Meadow Mountain, in Garrett County. In 1918 a wooden tower was erected on Snaggy Mountain in the same county.

In the meantime the warden organization had developed until it numbered more than 200 men. Some funds for equipment were obtained, and fire rakes, torches, and pumps were distributed.

For the first 18 years of the organization, insufficient funds to develop the work was a great handicap. On one official,

an Assistant Forester, devolved the entire responsibility for developing the organization. It was impossible for one man to cover even a portion of the entire State adequately, to seek out and obtain responsible men, to train them, and to properly equip them for the work of the Forest Warden.

In answer to an urgent request, the Governor and Legislature of 1924 provided for three additional employees on a part-time basis, to aid in the extension of the organization in the northeastern, southern, and central portions of the State. One resident forest warden on the State Forests of Western Maryland, contributing one-half of his time to fire control activities, gave, with the officials noted above, fairly satisfactory organization aides in the more hazardous sections of the State.

Following this important and far-reaching step, a large advance was made in extending the force of Wardens and in increasing their efficiency through developing a better *esprit de corps,* and in training them for their work. In the meantime, a system of lookout towers was being established, and by 1925 eight towers were in operation.

In 1923 the registered crew plan, as an aid to organization for fire control, was inaugurated. Under the plan each Forest Warden is authorized to contract for the services of six or eight men in his locality to serve on any fire in his district. In consideration of their agreement to serve whenever called, these men receive a higher rate of pay than ordinary labor. This system has helped greatly in increasing the efficiency of fire fighting labor.

In 1925 the practice of using smoke chasers, or to give them a more dignified designation, Fire Patrolmen, was tried out. It is characteristic of the warden force that this type of organization for fire control is hardest to obtain in locations where intensive control is of greatest importance,—wild woodland areas cut up by railroads, roads, and other forms of hazard. Consequently, a need was recognized for a type of employee entirely free from other responsibilities to act as a first line of defense force in fire suppression. A few men were employed in 1925 and stationed as near to the tower as logical, considering the road system over the area covered.

Each man was required to have an automobile in good running order, and he was furnished with a complete set of fire fighting tools to equip six men.

All fires were reported immediately to the Fire Patrolman, who left at once for the scene of the fire. The fires were reported also to the nearest Forest Warden, and often the local man arrived at the fire first. In cases, however, where the warden could not be reached quickly because of absence due to his other duties, the patrolman arrived a few minutes, at most, after detection, when work on a fire is most effective. The use of smoke chasers proved successful from the first, and their use has been gradually extended as funds have permitted, until at present, employees of this class serve nine of the twelve towers in the State.

The Legislature of 1927 provided important increases for forest protection work. Of far reaching importance was the provision to set up a force of three full-time technical foresters, to administer the fire control organization of their districts. Hitherto towermen had not been recognized on the budget, but the 1927 budget provided a sufficient sum for their hire. Further, an appropriation was received for salaries and expenses of fire patrolmen.

These improvements, made available at the beginning of the fiscal year, 1928, have proven of great value. The District Foresters have administered the organization under their direction effectively and with pleasing results. One hundred and fifty-five wardens qualified during the period October 1, 1927 and September 30, 1928, bringing the total number of Forest Wardens in the State to 550 men. The salaried force active during the year consisted of one Assistant Forester and three District Foresters on a full-time basis, four District Forest Wardens, eight Fire Patrolmen (smoke chasers), and twelve Towermen.

During the year, one forest fire lookout tower was added to the detection system. The tower, of the steel type, is 93 feet tall, with wooden stairways and landings leading up to the glass enclosed top. Located at Brandywine, the tower overlooks important forest areas in Charles, Prince Georges, and Calvert Counties. A 93 foot tower, the highest in the

State to date, was necessary because no elevations, much above the general level of the territory, were found in the Coastal Plain region. The construction of this tower brings the total number in service in the State to 12.

Nine Forest Wardens conferences were held in Maryland during 1928. This represents the largest number ever held in the State during any one year. Three one-day conferences were held during late February on the Eastern Shore, at Salisbury, Easton, and Elkton. Early in March, the Forest Wardens of Charles and Prince Georges Counties met at La Plata. Later in the same month a two-day conference of Garrett County wardens was held at Oakland followed by one-day conferences at Cumberland, Hancock, and Frederick. On July 14, the Wardens of St. Marys County held a one-day conference at Leonardtown. The conferences were well attended and interesting discussions of various phases of fire control work resulted.

Co-operation

The Department of Forestry co-operates with many agencies in extending the forest fire control activities. The State does not attempt to assume entire responsibility for the prevention and suppression of all fires but operates under a theory which looks to the private owner of timberlands to assume an equal responsibility with the State in controlling these fires. Much of the co-operative effort is centered on encouraging the timberland owner, singly or in groups, to share his part of the protection work.

Baltimore City Water Department—Baltimore City owns about 8,000 acres of land in the Loch Raven watershed, which furnishes water to the city. Much of this area is in forests. Portions of the area originally in fields have been planted to coniferous trees, some of which are now 10 to 15 years old. Despite lack of any specific preparations for fire control, losses by fire have not been heavy. In order to minimize the possibilities of an outbreak of disasterous fires, a conference was held between the Assistant Forester in charge of fire control and the Superintendent of the Water Department. As a result of the conference it was decided that the greatest need at this time consists of adequate tools for fire fighting. Ac-

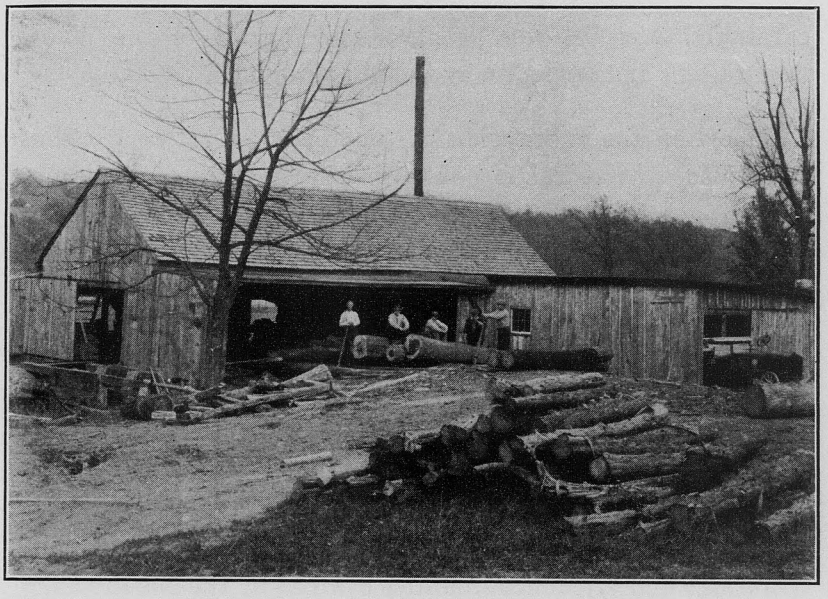

Fig. 1.—MORSE SAWMILL NEAR COOPSTOWN, HARFORD COUNTY
A sawmill has been operated by the same family on the same site for 87 years.

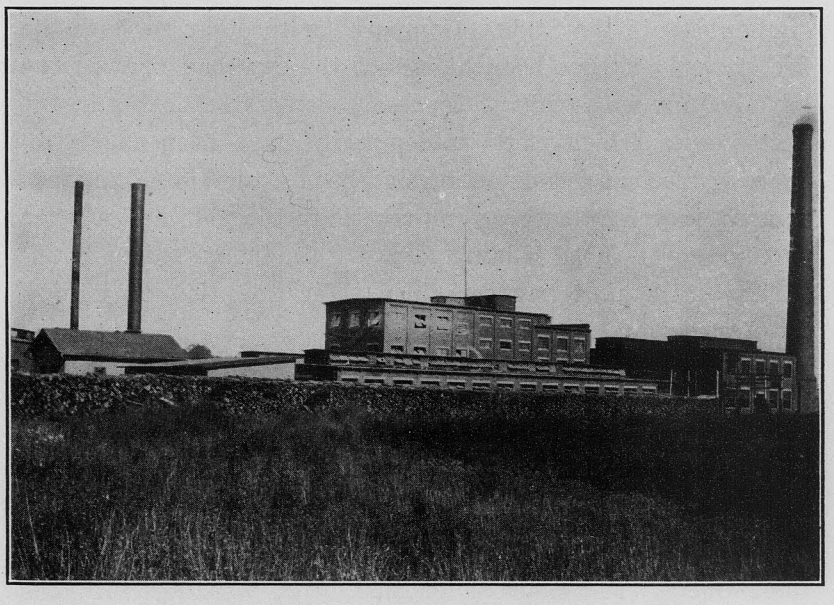

Fig. 2.—PAPER PULP MILL AT ELKTON, CECIL COUNTY
Typical of the larger wood-using industries of the State.

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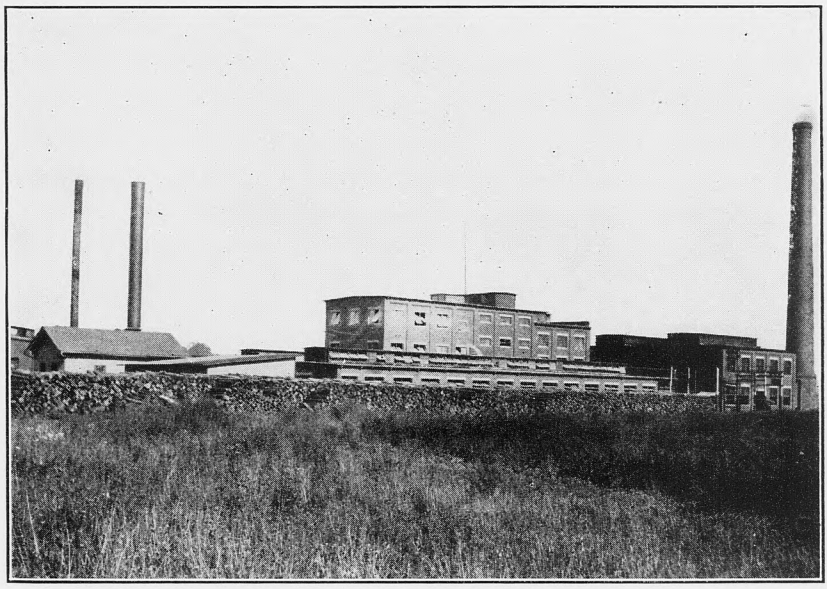


Fig. 2.—PAPER PULP MILL AT ELKTON, CECIL COUNTY
Typical of the larger wood-using industries of the State.

cordingly, a report was prepared for the use of the Water Department and agreed to by the Superintendent.

Following the submission of the report, eight tool caches were placed at strategic points on the watershed, each containing a complete six-man outfit for fire fighting. Fires happen unexpectedly, and the fact that fires have so far been rare on the watershed does not mean that conditions will remain the same in the future. As a measure of preparedness, this expenditure was highly desirable.

Nassawango Forest Protection Association—One of the main projects carried out by the District Forester on the Eastern Shore during the past year has been the organization of a forest protection association in that section of Worcester and Wicomico Counties drained by the Nassawango Creek and tributaries. This section is the most heavily wooded on the Eastern Shore, and the timber values involved are perhaps greater than those represented in any section of similar size in the State. Compared with other sections the fire hazard has not been high, but the few bad fires in the loblolly pine forests have represented material losses in the past—losses which could undoubtedly have been much reduced if efficient fire detection had been available. The landowners, in general, were sympathetic to the plan and a large percentage of those holding land within the proposed boundaries of the unit have signified their intention of joining the Association.

The primary motive in organizing consists in the erection of a forest fire lookout tower in co-operation with the Department of Forestry. The Association and the Department will subscribe equal amounts toward the erection of the tower, which will be maintained thereafter by the Forestry Department. Associations of this type, working with the

State in fire control, place this activity on a more equitable plan, State and individual each bearing part of the burden.

Charles and Prince Georges Counties—Co-operation in the erection of the Brandywine Tower was obtained from both Charles and Prince Georges Counties. Prince Georges County subscribed $300 and Charles County $200 toward the tower erection. The tower cost approximately $1,500 erected.

Federal Government—Under the Clarke-McNary Law of 1924, the United States Forest Service is authorized to co-operate with the states in the development of forest fire control activities. Under this law Maryland received from the Federal Government, for the fiscal year ending June 30, 1928, $6,400. For the fiscal year ending June 30, 1929, the appropriation is $7,210. These funds must be used according to the regulations of the Department of Agriculture, for purposes other than fire suppression. In Maryland, these funds have been used mainly for equipment—towers and fire fighting tools. Federal allotments for this activity have increased steadily in the past few years. Annual inspections of the fire control organization are made by the District Forest Inspector of the United States Forest Service.

Frederick City—The City of Frederick maintains a protection system on the City Forest of 5,500 acres, as outlined in a fire plan prepared for the City by the Department of Forestry in April, 1927. Under this plan the City has cut and maintained about 12 miles of fire lines during the past year, and a smoke chaser's cabin was erected at an advantageous location near Five Forks, where a City employee was stationed during the fire seasons.

Other States—Co-operation is maintained with the States of West Virginia and Pennsylvania in maintaining forest fire lookout towers. Snaggy Mountain Tower, near the Maryland-West Virginia line, is maintained co-operatively by the two states. Dan's Rock Tower supplies detection service for por-

tions of West Virginia, and reciprocal service is obtained in Maryland from the High Knob lookout tower in West Virginia. Quirauk Tower in Washington County, owned by the Western Maryland Railroad, is used by the States of Pennsylvania and Maryland co-operatively for fire detection.

Emergency Forces—In 1927 a plan was originated to obtain the services of industrial workers in towns adjacent to forested areas, to aid in fire control under unusual situations when the regular force could not cope with the problem. Gratifying results have been obtained from several large industrial plants in Western Maryland. In Frederick, employees of the Ox-Fiber Brush Company and the Frederick Iron Works have organized forest protection squads. Each squad is headed by a Forest Warden acceptable to the Department of Forestry and to the men of the organization. A similar crew exists at the Kelly-Springfield Tire Company at Cumberland. Members of the Izaak Walton League of Frederick have designated their willingness to serve whenever called upon for fire suppression, and a Warden has been appointed within that organization. Spread of this type of work will probably not be rapid. It is only feasible where a heavy fire hazard exists in the neighborhood of an industrial city. In the cases cited it has already proven its worth, the men having effectively suppressed serious fires in the last spring fire season.

Other Agencies—Many other agencies have co-operated with the Department of Forestry during the past fiscal year. There are at present over thirty-five Volunteer Fire Companies actively interested in fire suppression, with a Forest Warden appointed for each company. This represents a large percentage of the Fire Companies within the State, and the number coming under the co-operative plan is growing steadily larger.

Lancelot Jacques, owner of large areas of woodland on the Catoctin Mountain, Frederick County, co-operated with the Department in maintaining a mounted patrol on the Catoctin Mountain during the past year.

Through arrangement with the Commissioner of Motor Vehicles, the State police are commissioned Forest Wardens. This

body has rendered valuable service in suppressing fires, investigating causes of fires, and in other law enforcement work.

The State Game Department co-operates with the Department of Forestry in posting fire signs and in printing fire warning notices on all hunting licenses.

Fire Prevention

Fire Warning Signs—A new fire sign, illustrated by a cut in the appendix of this report, was designed for use during the year. A large number of these signs have been posted throughout the State by the regular employees of the Department. In 1926, a policy of posting large signs on wooden backs at two-mile intervals along the State roads, was inaugurated. This has been developed further during the past year by posting the Washington Boulevard between Baltimore and Washington, the Defense Highway, and all improved roads in Cecil County.

Railroad Fire Hazards—The Railroad Safety Strip Law of 1924 requires that all railroads clear annually, between October 1 and April 15, a 100-foot strip along such portions of their right-of-way as have been declared fire hazards. Annual inspections of fire hazards are made each spring. This year the practice was made of going over the hazards before March 15 to determine, if possible, how many of the hazards were cleared previous to the spring fire season. The final inspection was made by the salaried forces as soon after April 15 as possible. In general, very good adherence to the law was evident, but, as in years before, certain sections of a railroad were cleared badly or not at all. It is felt that an investigation of fires caused by the railroads during the year since the Fire Hazard Law has been in effect demonstrates that safety strips are effective. Railroad officials are forced, in many cases, by the pressure of other work to leave the clearing of fire hazards until just before the time mentioned in the law, and when this occurs there is usually some loss. Seventy-four railroad fires burned over 2,728 acres, or 9 per cent. of the total acreage burned. Damage by railroad fires during the past year

amounted to $1,727, or 5 per cent. of the total damage by fires in the State.

Law Enforcement—The fiscal year for which this report is prepared is the first year in which the new fire laws, passed by the 1927 Legislature, were effective. The changes made in the law consisted in increasing the penalty for incendiarism and in making the careless setting of a forest fire punishable as a misdemeanor. There were no cases of incendiarism tried before the court during the past fiscal year, but twenty-eight cases were pressed under the law punishing the causing of fire through carelessness. Of the cases brought to the courts, twenty-two were convicted, the total fines amounting to $160.20. Six cases ended in an acquittal. Law enforcement effort has increased the respect for the law.

During the past fiscal year, 113 fire claims were presented to various individuals and corporations responsible for setting fires, involving $1,671.20. Of this number 61 were paid in full during the period, $636.72 being received. Ten claims upon further investigation were dropped. Partial payment of $3.00 was made on one claim. During the past year $232.00 has been collected on fires occurring before October 1, 1928, making a total of $868.72 collected during the past fiscal year. This represents 11 per cent. of the total expenditures for fire suppression during the same period.

Lectures and Exhibits—One hundred and thirty-one lectures, dealing wholly or in part with fire prevention, were held during the past year. In this manner, steadily year by year, a consciousness of the importance of fire prevention is being built up in all parts of the State. Many of the lectures are held in out-of-the-way places where such instruction is especially valuable from the fire prevention standpoint.

Exhibits dealing with fire prevention were held at the Allegany County Fair at Cumberland, the Charles County Fair at La Plata, and the Montgomery County Fair at Rockville.

Other Activities—In any mention of fire prevention activities, the important influence and effect of the work of the 550 Forest Wardens of the Department should not be minimized.

No fire prevention work is more important, for they watch over their limited districts with abiding care, and constantly warn neighbors and friends of the importance of fire prevention. The District Foresters, District Forest Wardens, and other employees in their visits over their districts, are constantly performing fire prevention work. Sawmills are inspected for adequate arresters, brush-burners are counseled as to necessary precautions, and hunters and campers are cautioned.

Forest Fires

Following the practice started in 1927 the fire statistics included in this report are for the calendar year, 1928, instead of for the fiscal year, for which the remainder of the report is prepared. During the spring fire season, January 1 to June 30, 536 fires occurred, burning a total of 28,037 acres, with a damage of $219,567. The total expense of suppression during this period amounted to $6,940.49. This is the largest number of fires ever reported during the same period since the organization has been functioning. The season was characterized by an unusually large number of early fires. Fires occurred in all parts of the State in January and February, months which are ordinarily considered outside of the fire hazard period. The largest number of fires and greatest damage occurred in the last ten days of March, and the first two ten-day periods of April. In Western Maryland serious losses occurred from May 1 to 20. May 20 was virtually the end of the spring fire season.

The fall fire season began uniformly throughout the State in the last ten-day period of October, and continued throughout November. Late December was exceptionally dry and a few fires occurred during that period. In all 98 fires occurred during the fall fire season. This number may be considered about normal for Maryland conditions. These fires burned over 3,987 acres, with a damage of $37,985. The cost of suppression amounted to $780.31.

The classification of fires by causes shows that smoking caused the largest number of fires, 160 having been placed in this classification, representing 25 per cent. of the total number

of fires. Brush burning came next with 144, or 23 per cent. of the total number; followed by 93 incendiary fires, or 15 per cent. Railroads caused 76 fires, or 12 per cent. Fifty-one fires, or eight per cent. were assigned to miscellaneous causes. Twelve fires, or two per cent., were caused by campers, and ten fires, or one per cent., were caused by lumbering operations. No cause could be ascertained for 88 fires, or 14 per cent. of the total. Wardens answered 33 fire calls through the year which proved, upon investigation, to be false alarms. False alarms are not included in the total number of fires.

The average area burned over per fire during the year was 51 acres. This figure falls half-way between the record of 18 acres in 1927, and the record of 115 acres in 1926. It shows, however, an increase in fire suppression efficiency, inasmuch as the year 1927 was so unusual as to bear little weight in comparisons and the past year is closely comparable to the fire season of 1926 when the acreage burned per fire was very considerably greater.

The Department of Forestry has for an objective the reduction of the acreage burned over in an average year to one per cent. of the total forested area of the State. During the year 1.3 per cent. of the total forested area was burned over by forest fires, demonstrating that accomplishment lags considerably behind the objective.

Classified according to size we find that 38 fires burned less than one-quarter of an acre, 278 fires burned between one-quarter of an acre and ten acres, and 318 fires burned more than ten acres.

Garrett County led in the number of fires reported with 94 fires, burning 5,377 acres; Prince Georges County came next with 71 fires, burning 3,830 acres; and Allegany with 68, Anne Arundel with 52, and Cecil with 36 followed in the order listed. An increase in Garrett County fires, due to several outbreaks of incendiarism, over records of former years is to be noted. Railroad fires were decreased to 12 per cent. of the total number during this year due to more effective safety strip clearance.

TABLE I—FOREST FIRES BY SEASONS IN THE COUNTIES

January 1 to December 31, 1928.

County	Spring, 1928				Fall, 1928			
	No.	Acreage	Damage	Expense	No.	Acreage	Damage	Expense
Allegany	68	2,901½	$6,144.45	$1,065.64	13	220	$508.00	$73.46
Anne Arundel	52	2,993½	30,358.50	512.28	15	208	222.85	100.90
Baltimore	14	401½	14,403.00	48.50	1	8	32.00	6.45
Calvert	12	120	1,107.50	99.90	2	15	16.00	21.00
Caroline	10	556	3,550.00	76.15	..	.....	.....	.....
Carroll	1	3½	7.00	4.50	..	.....	.....	.....
Cecil	36	2,519½	16,114.00	623.34	2	6½	20.00	8.75
Charles	17	1,256¼	11,031.50	227.24	..	.....	.....	.....
Dorchester	14	208	1,072.00	98.35	4	2,615	31,330.00	55.65
Frederick	13	134½	425.50	183.05	1	.....	.....	4.85
Garrett	94	5,377¾	8,780.55	1,222.30	7	165½	254.25	36.25
Harford	10	929	5,364.75	91.70	..	.....	.....	.....
Howard	6	53½	316.50	25.50	..	.....	.....	.....
Kent	4	69	111.00	14.10	..	.....	.....	.....
Montgomery	38	1,037	7,543.00	357.49	2	31	69.00	14.00
Prince Georges	71	3,830¼	63,504.50	1,154.42	30	168⅜	954.50	212.50
Queen Annes	1	25	.....	10.10	..	.....	.....	.....
St. Marys	10	344¼	2,918.50	58.70	3	20½	75.00	22.25
Somerset	10	526¼	16,414.00	99.03	4	36	2,125.00	35.90
Talbot	1	.....	.....	18.50	2	40	200.00	11.20
Washington	19	2,173	10,097.50	399.45	5	217	1,100.00	122.15
Wicomico	16	671¾	4,381.00	142.55	5	111½	664.00	39.80
Worcester	19	1,906	15,923.00	407.70	2	125	415.00	15.20
Total	536	28,037	$219,567.75	$6,940.49	98	3,987⅜	$37,985.60	$780.31
False Alarms	29	.....	.....	105.90	4	.....	.....	15.50
	565	.....	.....	$7,046.39	102	.....	.....	$795.81

TABLE II—FOREST FIRES BY COUNTIES

January 1 to December 31, 1928

County	No.	Acreage	Damage	Expense
Allegany	81	3,121½	$6,652.45	$1,139.10
Anne Arundel	67	3,201½	30,581.35	613.18
Baltimore	15	409½	14,435.00	54.95
Calvert	14	135	1,123.50	120.90
Caroline	10	556	3,550.00	76.15
Carroll	1	3½	7.00	4.50
Cecil	38	2,526	16,134.00	632.09
Charles	17	1,256¼	11,031.50	227.24
Dorchester	18	2,823	32,402.00	154.00
Frederick	14	134½	425.50	187.90
Garrett	101	5,543¼	9,034.80	1,258.55
Harford	10	929	5,364.75	91.70
Howard	6	53½	316.50	25.50
Kent	4	69	111.00	14.10
Montgomery	40	1,068	7,612.00	371.49
Prince Georges	101	3,998⅝	64,459.00	1,366.92
Queen Annes	1	25	.....	10.10
St. Marys	13	364¾	2,993.50	80.95
Somerset	14	562¼	18,539.00	134.93
Talbot	3	40	200.00	29.70
Washington	24	2,390	11,197.50	521.60
Wicomico	21	783¼	5,045.00	182.35
Worcester	21	2,031	16,338.00	422.90
Total	634	32,024⅜	$257,553.35	$7,720.80
False Alarms	33	.....	.....	121.40
	667	.....	.....	$7,842.20

TABLE III—CAUSES OF FOREST FIRES BY COUNTIES

January 1 to December 31, 1928

County	R. R.	Campers	Smoking	B. B.	Inc.	Lumbering	Miscellan.	Unknown	Total	F. A.
Allegany	14	..	18	12	10	1	11	15	81	..
Anne Arundel	2	2	34	15	7	..	5	2	67	2
Baltimore	2	1	4	5	2	1	..	..	15	.
Calvert	..	..	3	5	1	..	2	3	14	..
Caroline	1	..	2	5	1	..	..	1	10	1
Carroll	..	..	..	1	..	..	..	..	1	1
Cecil	4	..	2	11	8	..	3	10	38	2
Charles	1	..	4	11	..	..	1	..	17	3
Dorchester	1	..	2	8	1	..	4	2	18	..
Frederick	1	..	4	1	5	..	1	2	14	3
Garrett	6	2	21	6	34	4	4	24	101	14
Harford	4	..	3	2	..	..	1	..	10	..
Howard	1	..	2	1	1	..	..	1	6	..
Kent	..	..	1	1	..	..	2	..	4	..
Montgomery	8	2	8	9	8	..	3	2	40	..
Prince Georges	25	3	33	26	3	..	4	7	101	4
Queen Annes	..	..	..	..	..	..	..	1	1	..
St. Marys	..	1	6	4	..	..	1	1	13	..
Somerset	..	1	2	3	..	..	2	6	14	..
Talbot	..	..	3	..	..	..	..	..	3	..
Washington	1	..	3	2	10	..	5	3	24	2
Wicomico	5	..	2	10	..	..	1	3	21	..
Worcester	..	..	3	6	2	4	1	5	21	1
Total	76	12	160	144	93	10	51	88	634	33
Per Cent	12	2	25	23	15	1	8	14	100	..

TABLE IV—Damage of Forest Fires by Causes

January 1 to December 31, 1928

Cause	No.	Per Ct.	Area	Per Ct.	Damage	Per Ct.
Railroad	76	12	2,733¾	9	$11,736.00	5
Campers	12	2	672	2	13,761.75	5
Smoking	160	25	3,816⅝	12	17,915.10	6
Brush burning	144	23	7,362½	23	86,328.75	33
Incendiary	93	15	10,859¼	34	84,013.95	33
Lumbering	10	1	1,064	3	3,614.30	2
Miscellaneous	51	8	1,555½	5	10,018.00	4
Unknown	88	14	3,960¾	12	30,165.50	12
Total	634	100	32,024⅜	100	$257,553.35	100
False Alarms	33					
Total	667					

TABLE V—Number and Percentage of Fires by Districts

January 1 to December 31, 1928

	No.	Per Cent.
District I—Western Maryland—Allegany, Frederick, Garrett, Washington	220	33
District II—Western Shore—Anne Arundel, Baltimore, Calvert, Carroll, Charles, Harford, Howard, Montgomery, Prince Georges St. Marys	284	45
District III—Eastern Shore—Caroline, Cecil, Dorchester, Kent, Queen Annes, Somerset, Talbot, Wicomico, Worcester	130	22
	634	100

FINANCIAL STATEMENT

1928.

Balance, October 1, 1927		$2,629.51
Receipts (October 1, 1927-September 30, 1928):		
State Treasurer	$61,594.67	
Woodlot work (travel)	224.26	
Reimbursement (fire expenses)	1,252.35	
Other resources	340.39	
Clarke-McNary Refund	9,071.48	
	$72,483.15	
Interest, F. & M. National Bank	63.86	72,547.01
		$75,176.52
Bills paid by State Comptroller		3,653.14
		$78,829.66
Expenditures (October 1, 1927-September 30, 1928):		
Salaries and wages	$40,923.00	
Repairs to motor vehicles	299.17	
Traveling	1,799.66	
Freight and express	246.83	
Postage	1,100.00	
Office supplies	750.00	
Printing	1,312.02	
Motor supplies	802.63	
Office equipment	1,405.91	
Field equipment	629.08	
Rent	2,000.00	
Insurance	35.00	
Travel—District Foresters	2,708.72	
Rent—District Foresters	314.56	
Office equipment	307.50	
Office supplies	217.14	
Telephone—District Foresters	140.13	
Telephone—Towermen	151.40	
Fire fighting tools	4,134.16	
Travel—Smoke Chasers	1,501.67	
Repairs to buildings—Garrett	50.00	
Repairs to buildings—Patapsco	50.00	
Repairs to buildings—Ft. Frederick	50.00	
Seeds and trees	2,405.65	
Deficiency appropriation	2,370.85	
Miscellaneous—Income to State Treasurer	11,253.27	$76,958.35
Bank balance, September 30, 1928		$1,871.31

APPENDIX

LECTURES

* Illustrated. † Extension Department.

Date	Location	Under Auspices
1927		
Oct. 11	Baltimore	*Alumni Association, Eastern High School.
Oct. 12	Cockeysville	Garden Club.
" 12	Branchville	Prince Georges County Vol. Firemen's Associat'n
" 14	Cockeysville	*Parent-Teachers' Association
" 20	Baltimore	*Parent-Teachers' Association, School No. 22.
" 25	Fullerton	Fullerton School.
" 28	Baltimore	*Forest Park Presbyterian Church.
Nov. 4	Highlands	†Smith-Hughes Agricul ural Class.
" 8	Baltimore	Rotary Club.
" 16	Riverdale	Riverdale Volunteer Fire Company.
" 17	Branchville	Branchville Volunteer Fire Company.
" 18	Olney	Montgomery County Fireman's Association.
" 21	Laurel	Laurel Volunteer Fire Department.
" 28	Bethesda	Bethesda Volunteer Fire Department.
Dec. 2	Baltimore	*Gwynns Falls Park Junior High School.
" 5	Baltimore	*Lumber Exchange.
" 5	East Riverdale	Riverdale Heights Volunteer Fire Company.
" 5	Baltimore	*Mothers' Mission, Church of the Ascension.
" 8	Seat Pleasant	Seat Pleasant Volunteer Fire Department.
" 14	Capitol Heights	Prince Georges County Firemen's Association.
" 15	Parkville	*Parkville School.
" 16	Ellicott City	*Ellicott City High School.
" 16	Baltimore	*Lutheran Hebrew Center.
" 28	Rockville	Rockville Volunteer Fire Department.
1928		
Jan. 12	Baltimore	*Gwynns Falls Park Junior High School.
" 19	Hebron	*Parent-Teachers' Association.
" 23	Willards	*Community.
" 25	Greater Capitol Heights	Volunteer Fire Department.
" 25	Wetipquin	Parent-Teachers' Association.
" 26	Baltimore	*Gwynns Falls Park Junior High School.
" 26	Chevy Chase	Chevy Chase Volunteer Fire Company.
Feb. 1	Vienna	*High School.
" 2	Baltimore	*Gwynns Falls Park Junior High School.
" 2	Hurlock	*High School.
" 3	Delmar	*Parent-Teachers' Association.
" 6	Eden	Parent-Teachers' Association.

LECTURES—Continued

Date 1928		Location	Under Auspices
Feb.	7	Relay	Men's Club, Presbyterian Church.
"	7	Sharptown	†Poultry Meeting.
"	7	S. E. of Delmar	†Poultry Meeting.
"	8	Parsonsburg	†Poultry Meeting.
"	8	Berlin	*High School.
"	14	Baltimore	*Parent-Teachers' Association, School No. 72.
"	14	Bowie	Volunteer Fire Department.
"	15	White Marsh	*Parent-Teachers' Association.
"	16	Bivalve	Parent-Teachers' Association.
"	20	College Park	Botanical Seminar, U. of M.
"	24	Catonsville	*Men's Club, Presbyterian Church.
"	24	Whitehaven	Poultry Meeting.
"	24	Prince Frederick	Volunteer Fire Department.
Mar.	1	Linthicum	Community Fire Company.
"	5	Mt. Airy	Volunteer Fire Department
"	5	Baltimore	*Gibson Island Garden Club.
"	5	Flintstone	High School.
"	6	La Plata	Charles County Warden Conference.
"	6	Oldtown	High School.
"	7	Oakland	High School.
"	8	Accident	High School.
"	13	Baltimore	Co-operative Club.
"	15	Baltimore	*Maryland Forestry Association.
"	26	Pleasant Valley	*Parent-Teachers' Association.
"	27	Annapolis	Four Rivers Garden Club.
"	27	Baltimore	*Grace English Lutheran Church.
"	27	Jefferson	*Parent-Teachers' Association.
"	28	Sieglers Church	*Forest Warden.
"	28	Easton	Rotary Club.
"	29	Frederick	Lion's Club.
"	30	Wolfsville	*Grange.
April	2	Cottage City	Volunteer Fire Department.
"	9	Hyattsville	Volunteer Fire Department.
"	10	Brunswick	*Parent-Teachers' Association.
"	10	Reisterstown	*Parent-Teachers' Association.
"	11	Laurel	Prince Georges County Vol. Fireman's Assoc'n.
"	12	Boulevard Heights	*Volunteer Fire Department.
"	13	Hamilton	*Boy Scouts, St. Dominics School.
"	18	Baltimore	*Cosmopolitan Club.
"	19	Baltimore	*Business Women's Club, Y. W. C. A.
"	20	Maryland Line	*New Market School.
"	20	Gaithersburg	Volunteer Fire Department
"	20	Woodensburg	*Parent-Teachers' Association.
"	24	Upper Falls	*School.
"	25	Baltimore	Tall Cedars Luncheon Club.

LECTURES—Continued

Date 1928	Location	Under Auspices
April 26	Baltimore	School No. 40.
" 26	Baltimore	Optimist Club.
" 26	Chestertown	Washington College.
" 27	Baltimore	Civitan Club.
" 27	Abingdon	Volunteer Fire Company.
" 30	Baltimore	Scimiter Club.
" 30	Baltimore	*Troop 80, Boy Scouts.
May 2	College Park	State Federation of Women's Clubs.
" 4	Branchville	Volunteer Fire Department.
" 8	College Park	Engineering School, U. of M.
" 8	White Hall	*Vernon Parent-Teachers' Association.
" 11	Baltimore	*School No. 86.
" 14	Baltimore	*Daughters of 1812.
" 16	Baltimore	Men's Club, St. David's Church.
" 16	Calvert	†*Home Makers' Club.
" 18	Sparks	†*Parent-Teachers' Association.
" 23	Norbeck	State Convention: League of Women Voters.
" 25	Hamilton	Boy Scouts, St. Dominics Church.
" 29	Beckleysville	*Patrons Club.
" 29	Baltimore	*Sunshine Society of Howard Park.
June 1	Frederick	*Community Club.
" 9	Hyattsville	Prince Georges County Community Council.
" 14	Snow Hill	Women's Club of Worcester County.
" 29	Berwyn Heights	Volunteer Fire Department.
July 10	Bladensburg	Volunteer Fire Department.
" 11	Pearre	Boy Scouts of Hagerstown.
" 14	Leonardtown	*Forest Warden Conference.
" 31	Washington	†Radio: W. M. A. L.
Aug. 6	Piney Grove	*A. L. Sines, District Warden.
" 7	Sang Run	*Sherman Savage, Warden.
" 7	Upper Marlboro	*Mellwood Women's Club.
" 8	White Rock	*Harrison Sines, Warden.
" 9	Cove	*E. F. McClintock, Warden.
" 10	Baltimore	Exchange Club.
" 10	Grantsville	*E. A. Beachy, Warden.
" 10	Swanton	*J. G. Friend, Warden.
" 12	Swallow Falls	*A. L. Sines, Warden.
" 13	New Germany	*H. O. Miller, Warden.
" 14	Bittinger	*C. R. Broadwater, Warden.
" 15	Oakland	State Grange.
" 16	Bethlehem	*Mike Tasker, Warden.
" 17	Vindex	*C. H. Knox, Warden.
" 18	Chestnut Grove	*W. H. Barnard, Warden.
Sept. 12	Hagerstown	Rotary Club.
" 13	Frederick	Lion's Club.
" 18	Lansdowne	*Lansdowne Improvement Association.
" 18	Hagerstown	Lion's Club.
" 20	Hagerstown	Monarch Club.
" 26	Frederick	Rotary Club.
" 28	Mt. Hermon	Mt. Hermon Fair.

WOODLAND EXAMINATIONS

Date 1927	Name	Address	Location	Acres
Oct. 7	Kinsman, Miss A.	Silver Spring	Burnt Mills	25
" 17	Stewart, Glenn	Easton (E. P. Walls, Mgr.)	Rich Neck Farm near Tunis Mills	100
" 26	Dail, Herbert F.	Cambridge	Near Cambridge	200
" 29	Isla Corp. (Potterwoods)	Easton (E. P. Walls, Mgr.)	Wye Island	30
Nov. 2	Dashiell, Charles	Salisbury	4 Miles West of Salisbury	8
" 2	Long, C. and J.	Fruitland	4½ Miles North of Salisbury	190
" 5	Belcher, Leon K.	Waldorf	Near Waldorf	60
" 10	Todd, Robert I.	Indianapolis	Near Bel Alton	30
" 11	Swaren, J. W.	Route 1, Brookville	Laytonsville	23½
" 11	Barnet, Mrs. Elizabeth	Venton	1 Mile South of Venton	200
" 16	Green, C. C.	Marion	2 Miles N. W. of Marion	30
" 16	Ring, J. J.	Westover	Near Westover	73
" 17	Briddle, V. M.	Route 1, Princess Anne	6 Miles N. E. of Princess Anne	100
" 18	Dail, Herbert F.	Cambridge	2 Miles South of Cambridge	25
Dec. 1	Nuttle, Harry	Hobbs	1 Mile N. W. of Hickman	90
" 3	Totten, Howe	Washington, D. C	Near Baldwin	50
" 6	Hopkins, Wm. H.	Easton	White House Farms, near Tunis Mills	100
" 7	Isla Corp. (Shornwoods)	Easton, (E. P. Walls, Mgr.)	Wye Island	100
" 8	Coleman, C. J.	Sherwood	Sherwood	20
" 10	Appold, W. B.	Rt. 1, Berwyn	4 Miles E. of Berwyn	33
" 11	Carroll, Wm. R.	Preston,R.F.D.	Near Preston	35
" 11	Humphreys, C. H.	Easton	Near Baileys Neck	30
" 20	Vaughn, E. L.	Rockawalking	Rockawalking	60
" 29	Burwell, R. L.	Annapolis	Defense Highway, near S. River	380
1928				
Jan. 3	McAllen, G. W. and H.A.	Princess Anne	2½ Miles N. of Princess Anne	190
" 10	Snider, Leonard	LaPlata	Bet. White Plains and LaPlata	200
" 11	Rantz, Mrs. N. P.	Ault, Colorado	Near Clinton	5
" 11	Price, P. A.	Rt. 1, Fruitl'd	4 Miles S. E. of Fruitland	75
" 11	Mills, McCager	Mitchellville	Near Mitchellville	35
" 13	Pollitt, A. L.	Salisbury	Salisbury	100
" 18	Rennie	Rt. 3, Salisb'y	Near Salisbury	8
" 24	House of Correction	Jessups	Jessups	220
" 26	Schlotzhaver, Chris.	Cordova	Cordova	40
" 26	Eberhard, H. S.	Cordova	2 Miles W. of Cordova	33
" 27	Radcliffe, C. W.	Bozman	2 Miles S. E. of Bozman	40
" 27	Harrison, O. D.	St. Michaels	Near St. Michaels	30
" 27	McQuay, S.	Bozman	Bozman	10
" 27	Marlow, M. E	Wash't'n, D. C.	Silverhill	200
" 31	Thompson Estate	Taylor's Island	Taylor's Island	25
" 31	Spicer, J. K.	Taylor's Island	Taylor's Island	30
Feb. 1	Phillips, J. C.	Cambridge	Cambridge	114
" 2	Hubbard, George	R.F.D.,Hurlock	Near Hurlock	10
" 13	Pryor, Theo.	Eden	Near Eden	22
" 13	Murray, Wm. J.	Rt. 1, Salisbury	Bet. Salisbury and Princess Anne	19
" 15	Brown, M. L.	Fruitland	Near Fruitland	15
" 17	Sioussat, Mrs. A.	Baltimore	Bare Hills	15

WOODLAND EXAMINATIONS—Continued

Date 1928	Name	Address	Location	Acres
Feb. 20	Laigniel, Nicholas	R. F. D. Federalsburg	2½ Miles N. of Federalsburg	35
" 20	Trice, Lewis	Care of B. Rosser, Federalsburg	3 Miles N. of Federalsburg	80
" 21	Dean, Victor	R. D. Federalsburg	3 Miles N. of Federalsburg	13
" 21	Trice, Lewis	R. D. Federalsburg	3 Miles N. of Federalsburg	35
Mar. 8	Warfield, J. M.	Baltimore	Near Daisy	130
" 20	Reading, Omar	R. D. Eden	Near Mt. Vernon	100
" 21	Hunteman, Oscar	Cordova	Cordova	4
" 21	Bradley, Capt. C. R.	Riverton	Sharptown	20
" 21	White, G. E.	Shelltown	2 Miles N. of Shelltown	75
" 21	Yoder, D. P.	Westover	5 Miles S. E. of Westover	27
" 24	Holloway, E. F.	St. Martin	Near St. Martin	75
" 26	Connor, Thomas	Snow Hill	Public Landing	68
" 29	Mrs. C. Hurlock (Emma Davis Estate)	306 St. Paul St. Baltimore	Vienna	100
April 4	Wilkinson, W. H.	R.F.D. Cambridge	Cambridge	6
" 5	Haslup, J. E.	Savage	Savage	75
" 6	Asplen, J. P.	R.D. Woolford	Woolford	187
" 6	Singer, Carl	Cambridge	Egypt Road, Cambridge	10
" 10	Martin, J. M.	Smithsburg	Near Smithsburg	10
" 14	Dashiell, Mrs. N. L.	2927 St. Paul St., Balto.	Cedar Grove	20
" 15	Detrick, Dr. F. L.	706 Gladstone Ave., Balto.	Between Ridgeville and New Market	500
" 25	Redgrave, James	Middletown, Delaware	Massey	200
May 1	Weber, Charles H.	Marietta, Ohio.	Near Hughesville	250
" 3	Dorsey, Claude	Annapolis Junc.	Annapolis Junction	100
" 9	Harlan, W. B.	Churchville	Churchville	40
" 11	Wilson, Robert Lee	Bel Air	Near Bel Air	30
" 11	Wilson, Luther	Route 1, Eden	Near Eden	150
" 16	Tindahl, Norman	R. D. Newark	Near Newark	45
" 22	Gabler, C. A.	Hills Pt.R.F.D.	Lloyds	65
" 22	Waters, W. H.	R. D. 2, Gaithersburg	South of Laytonsville	200
" 23	Hutton, F. C.	R. D. 4, Gaithersburg	Southwest of Clopper	60
" 23	Weber, Fred	R. F. D. Cambridge	Egypt Road, Cambridge	100
" 23	Carroll, Vivian	R. F. D. Cambridge	Near Cambridge	115
" 23	Blum, Peter	3245 Bel Air Rd., Balto.	Fallston	49
" 29	Long Lumber Company	Fruitland	East Princess Anne	48
June 12	Jones, John T.	Willards	Willards	10
" 12	Dukes, Clarence	Girdletree	Girdletree	688
" 13	Gray, V. B.	Albuquerque, New Mexico	8 Miles Northwest of Snow Hill	160
" 19	Edelin, Mrs. A. B.	Piscataway	Near Piscataway	45
" 20	Engle, John A.	Mt. Airy	Bartholow	10
" 21	Friel, Samuel	Queenstown	Queenstown	72
" 25	Messenger, H. B.	Federalsburg	Near Federalsburg	125
" 28	Prager, J.	Woodwardville.	Near Patuxent Station	100

WOODLAND EXAMINATIONS—Continued

Date 1928	Name	Address	Location	Acres
July 3	Jones, Arthur	Baltimore	Near Columbia	65
" 6	Brooke, Tarleton	Rockville	Near Norbeck	9
" 10	Franklin-Davis Nur. Co.	Baltimore	Mullikin	30
" 17	Byrd, L. F.	Wetipquin	Wetipquin	50
" 18	Hall and Jingell	Beltsville	Near Beltsville	176
" 18	Hall S. D.	Beltsville	Near Beltsville	56
" 19	Wheatley, C. R.	Hurlock	Shiloh Church	130
" 19	Stevens, Mrs. S. F.	Baltimore	East New Market	45
" 23	Powell, R. F.	Berlin	South of Ironshire	300
Aug. 8	Lloyd, D. B.	Glenn Dale	Vista	40
Sept. 14	Burroughs, H. B.	T. B.	Near T. B.	100
" 25	Carroll, Mrs. M. C.	Ellicott City	Near Elioak	50

Total number of Woodland Examinations 100 Total Acres 8,761½

WOODLAND EXAMINATIONS

October 1, 1927, to September 30, 1928

County	Number	Acres
Anne Arundel	4	850
Baltimore	2	65
Caroline	7	413
Charles	4	540
Dorchester	16	1,182
Frederick	2	510
Harford	3	119
Howard	4	320
Kent	1	200
Montgomery	5	317½
Prince Georges	10	720
Queen Annes	3	202
Somerset	11	1,015
Talbot	10	407
Washington	1	10
Wicomico	11	555
Worcester	6	1,336
Total number Woodland Examinations	100	Total acres 8,761½

MARKINGS

Date 1927	Name	Address	Location	Acres
Oct. 4-	Buchheister, George	Upper Marlboro	Oak Grove, near Leeland	60
" 18-25	Smith, Mrs. Mary	Route 1, Eden	Near Fruitland	127½
" 27-29	Stewart, Glenn	Easton, (E. P. Walls, Mgr.)	Rich Neck Farm, near Tunis Mills	50
Dec. 5-7	Isla Corp. (Potter-woods)	Easton, (E. P. Walls, Mgr.)	Wye Island	30
" 6-10	Hopkins, W. H.	Easton	White House Farm, Nr. Tunis Mills	100
" 8	Coleman, C. J.	Sherwood	Sherwood	10
1928				
May 9-10	Harlan, W. B.	Churchville	Churchville	40
July 5, 6,25	Vierling, R. E.	Sandy Spring	Colesville	88
Sept. 20	Sauter, Edward C.	Woodlawn	Woodlawn	55
" 21	Franklin-Davis Nursery Company	Baltimore	Mullikin	30
" 25-26	Carroll, Mrs. M. C.	Ellicott City	Near Ellioak	30
" 26-27	Carroll, Mrs. M. C.	Ellicott City	Tridelphia Pike	58

Total number of Markings 12. Total acres 678½

MARKINGS

October 1, 1927, to September 30, 1928

County	Number	Acres
Baltimore	1	55
Harford	1	40
Howard	2	88
Montgomery	1	88
Prince Georges	2	9
Queen Annes	1	3
Talbot	3	160
Wicomico	1	127½

Total number of markings 12. Total acres 678½

ESTIMATES

Date 1928	Name	Address	Location	Acres
Mar. 29-31 and April 2	Mrs. C. Hurlock (Emma Davis Est.)	306 St. Paul St., Balto.	Vienna	100
May 15-16	Holloway, W.	Newark	Newark	56
" 29	Long Lumber Co.	Fruitland	East Princess Anne	48

Total number of estimates 3. Total acres 204

ESTIMATES

October 1, 1927, to September 30, 1928

County	Number	Acres
Dorchester	1	100
Somerset	1	48
Worcester	1	56

Total number of estimates 3. Total acres 204

PLANTING PLANS

Date 1927	Name	Address	Location	Acres
Oct. 14	Chandler, Lloyd	Salisbury	South of Fruitland	150
Nov. 11	Jones, E. M.	Snow Hill	Snow Hill	5
" 15	Fisher, D. K. Este	Baltimore	Bohemian River	7
Dec. 1	Nuttle, Harry	Hobbs	1 Mile N. W. of Hickman	25
" 1	Richardson, Lloyd	Salisbury	2 Miles South of Hebron	200
" 3	Totten, Howe	Wash., D. C.	Near Baldwin	26
1928				
Jan. 3	McAllen, G. U. and H. A.	Princess Anne	2½ Miles N. of Princess Anne	2
" 12	Borneman, C. S.	Arnold	Near Arnold Station	7
" 24	House of Correction	Jessups	Jessups	10
" 31	Thompson, J. B.	Taylor's Island	Taylor's Island	5
Feb. 16	Baker, J. H. and W. G.	Frederick	Holland Farm	100
Mar. 26	Connor, Thomas	Snow Hill	Public Landing	10
April 4	Webb, Clayton M.	Vienna	South of Vienna	4
" 6	Dixon, Mrs. Anna	Church Creek	Church Creek	3
" 6	Fontaine, Rev. R. W.	Elkton	Near Elkton	15
" 10	Martin, John M.	Smithsburg	Smithsburg	5
" 12	Hollyday, King	St. Michaels	St. Michaels	25
" 25	Redgrave, James	Middletown, Delaware	Massey	30
May 5	Long, Elmer	Westover, R. D.	Greenhill	2
" 31	Fox, E. F.	Big Spring	Big Spring	5
June 6	Hubbard, Wilbur	Chestertown	Chestertown	50
" 12	Dennis, Lloyd	Wil ards	Near Willards	12½
" 13	Dukes, Clarence	Girdletree	Near Snow Hill	60
" 19	George, J. M.	Sudlersville	2 Miles West of Sudlersville	5
" 25	Messenger, H. B.	Federalsburg	3 Miles N. E. of Federalsburg	50
Total number of Planting Plans 25.			Total acres	813½

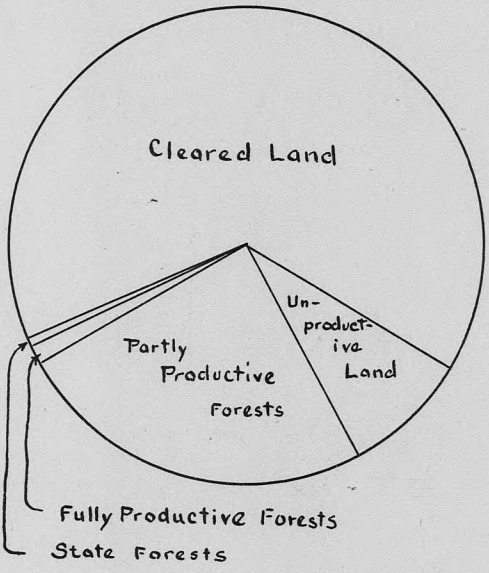
PLANTING PLANS

October 1, 1927, to September 30, 1928

County	Number	Acres
Anne Arundel	2	17
Baltimore	1	26
Caroline	2	75
Cecil	2	22
Dorchester	3	12
Kent	2	80
Montgomery	1	100
Queen Annes	1	5
Somerset	2	4
Talbot	1	25
Washington	2	10
Wicomico	3	362½
Worcester	3	75
Total number of Planting Plans	25	Total acres 813½

FOREST FIRE SIGNS, 1928
BLACK LETTERS ON ORANGE BACKGROUND

Present Use of Maryland's Land Area



Maryland has 2,223,000 acres of woodlands.

The present annual growth is 64,300,000 cubic feet.

The possible annual growth under management is 156,900,000 cubic feet.

The present annual consumption is 158,500,000 cubic feet.

The present annual cut is 71,500,000 cubic feet.

Let us change this deficit into a surplus by adequate forest protection and constructive forest management.

Increasing the area of State-owned forests is Maryland's best safeguard.